

54. (Amended) An apparatus for cutting a workpiece comprising:
means for moving a saw unit comprising a saw blade toward a surface of a table,
wherein the table is pivotally coupled to the saw unit,
means for detecting movement of the saw blade toward the table surface, the
detecting means being disposed proximally to the saw blade,
means for communicating the detection by the detecting means of movement toward
the table surface to a lock operably coupled to the saw unit, and
means for actuating the lock in order to prevent movement of the saw blade in a
plane parallel to the table surface.

RESTRICTION/ELECTION

In the Office Action mailed April 23, 2002, new Claims 51 and 52 were withdrawn from further consideration as being drawn to a non-elected invention. Applicants respectfully traverse the decision by the Patent Office to refuse to examine Claims 51 and 52 along with Claims 1-19, 21-29 and 33-50, 53 and 54, for the following reasons.

MPEP 806.05(e) specifically states: "If the apparatus claims include a claim to "means" for practicing the process, the claim is a linking claim and must be examined with the elected invention. If it is ultimately allowed, rejoinder is required." (Emphasis added) MPEP 806.05(e) further states: "The linking claim must be examined to the extent necessary to determine if the linking claim is unpatentable. If the linking claim is unpatentable, restriction is proper." (Emphasis added)

Further, MPEP 809 states: "The linking claims must be examined with the invention elected, and should any linking claim be allowed, the restriction requirement must be withdrawn." (Emphasis added) One common type of linking claim is "(C) a claim to

“means” for practicing a process linking proper apparatus and process claims.” MPEP 809.03.

Claims 53 and 54 read upon the elected species and also serve as linking claims for method Claims 51 and 52. Thus, if Claims 53 and 54 are allowable, the restriction requirement concerning Claims 51 and 52 should be withdrawn. For example, MPEP 818.03(d) states “If the Office allows such a [linking] claim, it is bound to withdraw the requirement and to act on all linked inventions.” (Emphasis added) Thus, the Examiner is respectfully requested to consider the patentability of Claims 53 and 54 in the next Office Action. If Claims 53 and 54 are deemed to be in a condition for allowance, withdrawal of this restriction requirement is hereby requested and Claims 51 and 52 should be considered on their merits. In the absence of a finding by the Examiner that Claims 53 and 54 are not in a condition for allowance, Applicants submit that restriction of Claims 51 and 52 would be arbitrary and capricious in view of the above-noted MPEP requirements.

Favorable reconsideration of the Examiner’s position is thus respectfully urged.

REQUEST FOR RECONSIDERATION

The claims now in this application are Claims 1-19, 21-29 and 33-54. Claims 51 and 52 are presently withdrawn from consideration.

The rejections of Claims 1-19, 21-29, 33-50, 53 and 54 under 35 U.S.C. §112, second paragraph, have been obviated by appropriate amendment.

Clarifying amendments have been made to many of the claims in accordance with the Examiner’s suggestions. Because the Examiner’s suggestions have been substantially

adopted with respect to these claims, a detailed discussion is not believed to be required. In addition, various other minor corrections have been made to some of the claims in order to correct typographical errors. Because these changes are believed to be self-explanatory, a detailed discussion of these changes also is not necessary.

Furthermore, it is noted that none of the claim amendments made herein are believed to narrow the scope of protection of any of the amended claims and it is not the intention of the Applicant to narrow the claims in response to this Office Action.

With respect to the rejection of Claim 21, Applicants submit the term "lock" in the present specification and claims is used in terms of its ordinary and common meaning, namely, any device that fastens something else and prevents it from opening, turning, etc. An actuator is not a necessary component of every lock and thus, it is inappropriate to read the element of an actuator into Claim 18. Consequently, Claim 21 is written in proper form.

With respect to Claim 40, it is noted that structural cooperation is, in fact, provided for the sensor of Claim 40, because the lock is "in communication with the sensor." Therefore, the rejection of Claim 40 is believed to be improper for this reason.

In view of the foregoing amendments and arguments, Applicants believe that all the rejections under 35 U.S.C. §112, second paragraph have been overcome, and that Claims 51 and 52 should be examined in this application, if linking Claims 53 and 54 are deemed to be allowable. Favorable reconsideration of the application is thus urged.

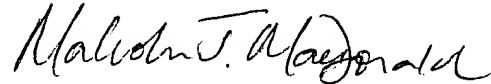
Applicants respectfully submit that the present invention is now in condition for allowance and early notice of such action is earnestly solicited.

The Applicants hereby petition the Commissioner of Patents and Trademarks to

extend the time for reply to the notice dated April 23, 2002 for one (1) month from July 23, 2002 to August 23, 2002. A duly completed credit card authorization form is attached to effect payment of the extension fee.

Respectfully submitted

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AMENDED CLAIMS

Claims 1-11, 13-17, 22-27, 29, 35-42, 44, 45, 48, 49 and 51-54 were amended as follows:

1. (Thrice Amended) A circular saw comprising:

a table having an upper surface for placing a workpiece thereon;

a saw unit having a saw blade mounted thereon;

means for supporting said saw unit on said table, said supporting means enabling said saw unit to move in a horizontal direction parallel to said upper surface of said table and to move in a vertical direction relative to said upper surface of said table; and

at least one of first lock means and second lock means, wherein said first lock means automatically prevents said saw unit from moving in the horizontal direction upon detection **[by a first sensor means]** of movement of said saw unit in the vertical direction **by a first sensing means**, and the second lock means automatically prevents said saw unit from moving in the vertical direction upon detection **[by a second sensor means]** of movement of said saw unit in the horizontal direction **by a second sensing means**.

2. (Four Times Amended) The circular saw as defined in claim 1 wherein the circular saw includes the first lock means and said first lock means comprises a fixing member **[for]** **releasably** fixing said saw unit in position relative to said table in the horizontal direction and an actuator **[for]** **coupled to and** selectively operating said fixing member.

3. (Four Times Amended) The circular saw as defined in claim 2 wherein:

said support means includes a support arm mounted on said table, a slide member horizontally slidable relative to said support arm, and hinge means for vertically pivotally connecting said saw unit to said slide member; and

wherein said fixing member **releasably** fixes said slide member in position relative to said support arm when said first **[sensor]** **sensing** means detects **said** vertical pivotal movement of said saw unit relative to said slide member.

4. (Thrice Amended) The circular saw as defined in claim 3 wherein:
said slide member comprises a slide shaft slidably inserted into a **shaft** holder
provided on said support arm;
said fixing member comprises a screw inserted into a threaded hole formed in said
shaft holder in a direction perpendicular to a longitudinal axis of said slide shaft, said screw
having one end arranged and constructed to abut said slide shaft; and
wherein said actuator rotates said screw in both clockwise and counterclockwise
directions so as to move said screw toward and away from said slide shaft.
5. (Twice Amended) The circular saw as defined in claim 4 further including a dust
cover mounted on said holder[, **said dust cover**] **and covering said actuator and said
screw, thereby** protecting said actuator and said screw from the outside environment.
6. (Four Times Amended) The circular saw as defined in claim 4 wherein:
said first **[sensor]** **sensing** means comprises a detector plate mounted on one of said
slide shaft or said saw unit, and an optical sensor mounted on the other of said slide shaft and
said saw unit;
said detector plate having a plurality of parallel identification bars marked thereon,
and said parallel bars being spaced from each other by a predetermined distance; and
wherein said optical sensor detects movement of said parallel identification bars as a
change in a reflected light pattern.
7. (Four Times Amended) The circular saw as defined in claim 1 wherein the circular
saw includes the second lock means and said second lock means comprises a fixing member
[for] **releasably** fixing said saw unit in position relative to said table in the vertical direction
and an actuator **[for]** **coupled to and** selectively operating said fixing member.
8. (Four Times Amended) The circular saw as defined in claim 7 wherein:

said support means includes a support arm mounted on said table, a slide member horizontally slidable relative to said support arm, and hinge means for vertically pivotally connecting said saw unit to said slide member; and

wherein said fixing member **releasably** fixes the pivotal position of said saw unit relative to said slide member when said second **[sensor] sensing** means detects horizontal sliding movement of said slide member relative to said support arm.

9. (Thrice Amended) The circular saw as defined in claim 8 wherein:

said slide member comprises a slide shaft slidably inserted into a **shaft** holder provided on said support arm;

said fixing member comprises a screw engaged with a threaded hole formed in said saw unit in a direction parallel to the pivotal axis of said saw unit;

said slide shaft having a flange portion that includes an abutting surface extending within a plane perpendicular to the pivotal axis of said saw unit and one end of said screw is arranged and constructed to abut said abutting surface of said flange portion; and

wherein said actuator rotates said screw in both clockwise and counterclockwise directions so as to move said screw toward and away from said abutting surface.

10. (Twice Amended) The circular saw as defined in claim 9 further including a dust cover mounted on said saw unit[, **said dust cover**] **and covering said actuator and said screw, thereby** protecting said actuator and said screw from the outside environment.

11. (Four Times Amended) The circular saw as defined in claim 9 wherein:

said **[sensor] second sensing** means includes a plurality of parallel identification bars marked on said slide shaft and an optical sensor provided on said **shaft** holder;

said parallel bars being spaced from each other by a predetermined distance along a longitudinal axis of said slide shaft; and

wherein said optical sensor detects movement of said parallel identification bars as a change in a reflected light pattern.

13. (Amended) The circular saw as defined in claim 12 wherein:

said first lock means includes a first fixing member **[for] releasably** fixing said saw unit in position relative to said table in the horizontal direction and a first actuator coupled to the first fixing member, said first actuator selectively moving said first fixing member between a locked position and an unlocked position; and

said second lock means includes a second fixing member **[for] releasably** fixing said saw unit in position relative to said table in the vertical direction and a second actuator coupled to the second fixing member, said second actuator selectively moving said second fixing member between a locked position and an unlocked position.

14. (Four Times Amended) The circular saw as defined in claim 13 wherein:

said support means includes a support arm mounted on said table and a slide shaft coupled to the support arm, wherein the slide shaft is **[arranged and constructed to slide] slidable** horizontally relative to said support arm, and a hinge means coupling the slide shaft to the saw unit, wherein said saw unit can pivot vertically relative to said slide shaft;

wherein said first fixing member **[fixing] fixes** said slide shaft in position relative to said support arm when said first **[sensor] sensing** means detects vertical pivotal movement of said saw unit relative to said slide shaft; and

wherein said second fixing member fixes the pivotal position of said saw unit relative to said slide shaft when said second sensor means detects horizontal movement of said saw unit relative to said support arm.

15. (Five Times Amended) The circular saw as defined in claim 14 wherein:

said slide shaft is slidably received in a **shaft** holder provided on said support arm;

said first fixing member comprises a first screw inserted into a first threaded hole formed in said **shaft** holder in a direction perpendicular to a longitudinal axis of said slide shaft, one end of said first screw being arranged and constructed to abut said slide shaft;

wherein said first actuator rotates said first screw in both clockwise and counterclockwise directions so as to move said first screw toward and away from said slide shaft;

said second fixing member comprises a second screw inserted into a second threaded hole formed in said saw unit in a direction parallel to the pivotal axis of said saw unit;

and wherein the circular saw further comprises a flange portion having an abutting surface extending within a plane perpendicular to the pivotal axis of said saw unit, one end of said second screw being arranged and constructed to abut said abutting surface of said flange portion; and

wherein said second actuator rotates said second screw in both clockwise and counterclockwise directions so as to move said second screw toward and away from said abutting surface.

16. (Twice Amended) The circular saw as defined in claim 15 further including a first dust cover and a second dust cover, said first dust cover being mounted on said holder[, **said dust cover**] **and covering said first actuator and said first screw, thereby** protecting said first actuator and said first screw from the outside environment, and said second dust cover being mounted on said saw unit[, **said dust cover**] **and covering said second actuator and said second screw, thereby** protecting said second actuator and said second screw from the outside environment.

17. (Four Times Amended) The circular saw as defined in claim 15 wherein:

said first **[sensor]** **sensing** means comprises a detector plate mounted on one of said slide shaft or said saw unit, and a first optical sensor mounted on the other of said slide shaft and said saw unit;

said detector plate having a plurality of first parallel identification bars marked thereon, said first parallel identification bars being spaced from each other by a predetermined distance;

wherein said first optical sensor detects movement of said first parallel identification bars as a change in a reflected light pattern;

said second **[sensor]** **sensing** means comprises a plurality of second parallel identification bars marked on said slide shaft and a second optical sensor provided on said **shaft** holder;

said second parallel identification bars being spaced from each other by a predetermined distance along the longitudinal axis of said slide shaft; and
wherein said second optical sensor detects movement of said second parallel identification bars as a change in a reflected light pattern.

22. (Four Times Amended) An apparatus as in claim 21, further comprising:
a support arm mounted on the table,
a slide shaft coupled to the support arm, wherein the slide shaft is **[arranged and constructed to slide] slidable** horizontally relative to the support arm and
a vertically pivotable hinge coupling the saw unit to the slide shaft, wherein:
when the first sensor detects vertical pivotal movement of the saw blade relative to the slide shaft, the first lock fixes the slide shaft in a position relative to the support arm and
when the second sensor detects horizontal movement of the saw blade relative to the support arm, the second lock fixes the saw blade in a position relative to the slide shaft.

23. (Four Times Amended) An apparatus as in claim 22 wherein:
the slide shaft is slidably received in a **shaft** holder connected to the support arm,
the first lock comprises a first screw inserted into a first threaded hole formed in the **shaft** holder in a direction perpendicular to a longitudinal axis of the slide shaft, one end of the first screw being arranged and constructed to abut the slide shaft, wherein the first screw is coupled to the first actuator **and [and the first actuator is arranged and constructed to rotate]** the first screw **is rotatable** in both clockwise and counterclockwise directions so as to move the first screw toward and away from the slide shaft,
the second lock comprises a second screw inserted into a second threaded hole formed in the saw unit in a direction parallel to the vertical pivotal axis of the apparatus,
and wherein the apparatus further comprises a flange portion having an abutting surface extending within a plane perpendicular to the vertical pivotal axis of the saw blade, one end of the second screw being arranged and constructed to abut the abutting surface of the flange portion, wherein the second screw is coupled to the second actuator **and [and the second actuator is arranged and constructed to rotate]** the second screw **is rotatable** in

both clockwise and counterclockwise directions so as to move the second screw toward and away from the abutting surface.

24. (Twice Amended) An apparatus as in claim 23 further comprising:

a first dust cover covering and protecting the first actuator and the first screw from the outside environment and

a second dust cover covering and protecting the second actuator and the second screw from the outside environment.

25. (Four Times Amended) An apparatus as in claim 24 further comprising:

a first detector plate mounted on either the slide shaft or the support arm, wherein the first sensor includes a first optical sensor mounted on the other of the slide shaft and the support arm, the first detector plate having a plurality of first parallel identification bars that are spaced from each other by predetermined distances, and the first optical sensor is disposed in relation to the first detector plate such that the first optical sensor detects movement of the first parallel identification bars as a change in a reflected light pattern and

a plurality of second parallel identification bars marked on the slide shaft, wherein the second sensor includes a second optical sensor coupled to the shaft holder, the second parallel identification bars are spaced from each other by predetermined distances in the longitudinal axis of the slide shaft and the second optical sensor is disposed in relation to the second parallel identification bars such that the second optical sensor detects movement of the second parallel identification bars as a change in a reflected light pattern.

26. (Amended) An apparatus comprising:

a table having a surface for placing a workpiece thereon,

a saw unit having a saw blade,

a first means for enabling the saw unit to move in a horizontal plane that is parallel to the surface of the table, the first means being coupled to the table and the saw unit,

a second means for enabling the saw unit to move in a vertical plane relative to the surface of the table, the second means being coupled to the table and the saw unit,

a first sensor **[arranged and constructed to detect the saw unit pivotally moving]**
detecting movement of the saw unit in the vertical plane,

a first lock operably coupled to the first means and the first sensor, wherein the first lock automatically prevents horizontal movement of the saw unit upon detection by the first sensor of the saw unit pivotally moving in the vertical plane,

a second sensor **[arranged and constructed to detect the saw unit moving]**
detecting movement of the saw unit in the horizontal plane and

a second lock operably coupled to the second means and the second sensor, wherein the second lock automatically prevents vertical pivotal movement of the saw unit upon detection by the second sensor of the saw unit moving in the horizontal plane.

27. (Amended) An apparatus as in claim 26, wherein the first lock comprises a first screw, wherein the first screw **releasably** fixes the saw unit in position relative to the table in the horizontal plane when the first screw engages the first means.

29. (Amended) An apparatus as in claim 28, wherein the second lock comprises a second screw, wherein the second screw **releasably** fixes the saw unit in position relative to the table in the vertical plane when the second screw engages the second means.

35. (Amended) An apparatus comprising:

means for supporting a workpiece,

means for cutting the workpiece,

means for enabling the cutting means to move in a plane that is parallel to the workpiece supporting means,

means for enabling the cutting means to move towards and away from the workpiece supporting means,

first sensing means for sensing movement of the cutting means towards the workpiece supporting means and

first means for automatically preventing the cutting means from moving in the plane parallel to the workpiece supporting means upon detection by the **[sensor]** **first sensing**

means of the cutting means moving towards the workpiece supporting means, wherein the **first** means for automatically preventing the cutting means from moving in the plane parallel to the workpiece supporting means is in communication with the **first sensing means** [for sensing movement of the cutting means towards the workpiece supporting means].

36. (Amended) An apparatus as in claim 35, further comprising:

second sensing means for sensing movement of the cutting means in the plane parallel to the workpiece supporting means and

second means for automatically preventing the cutting means from moving towards the table surface upon detection by the **second** sensing means of the cutting means moving in the plane parallel to the workpiece supporting means, wherein the **second** means for automatically preventing the cutting means from moving towards the table surface is in communication with the **second sensing** means [for sensing movement of the cutting means in the plane parallel to the workpiece supporting means].

37. (Amended) An apparatus as in claim 35, [wherein said enabling means] further comprising means for enabling the cutting means to laterally pivot relative to the workpiece supporting means so as to permit bevel cutting operations.

38. (Amended) An apparatus comprising:

means for supporting a workpiece,

means for cutting the workpiece,

means for enabling the cutting means to move in a plane that is parallel to the workpiece supporting means,

means for enabling the cutting means to move towards and away from the workpiece supporting means,

means for sensing movement of the cutting means in the plane parallel to the workpiece supporting means and

means for automatically preventing the cutting means from moving towards the workpiece supporting means upon detection by the sensing means of the cutting means

automatically preventing the cutting means from moving towards the **[table surface]** **workpiece supporting means** is in communication with the means for sensing movement of the cutting means in the plane parallel to the workpiece supporting means.

39. (Amended) An apparatus as in claim 38, **[wherein said enabling means]** further comprising means for permitting the cutting means to laterally pivot relative to the workpiece supporting means so as to permit bevel cutting operations.

40. (Amended) An apparatus comprising:

a table having a surface for supporting a workpiece,

a saw coupled to the table, the saw being movable at least in a direction parallel to the table surface and being movable towards and away from the table surface,

a sensor **[arranged and constructed]** detecting pivotal movement of the saw towards the table surface and

a lock operably communicating with the sensor, wherein the lock is arranged and constructed to automatically prevent movement of the saw parallel to the table surface upon detection by the sensor of the saw pivotally moving towards the table surface.

41. (Amended) An apparatus as in claim 40, further comprising:

a support arm coupled to the table,

a **shaft** holder connected to the support arm,

a shaft slidably received within the **shaft** holder and

a hinge coupling the **shaft** holder to the saw, the hinge permitting movement of the saw towards and away from the table surface.

42. (Amended) An apparatus as in claim 41, further comprising a screw threadably engaged within the **shaft** holder and a solenoid in communication with the sensor and coupled to the screw, wherein the solenoid rotates the screw to engage the shaft upon detection by the sensor of the saw moving towards the table surface, whereby movement of the saw parallel to the table surface is prevented.

44. (Amended) An apparatus comprising:
a table having a surface for supporting a workpiece,
a saw coupled to the table, the saw being movable at least in a direction parallel to the table surface and being movable towards and away from the table surface,
a sensor **[arranged and constructed to detect] detecting** movement of the saw parallel to the table surface and
a lock operably communicating with the sensor, wherein the lock is arranged and constructed to automatically prevent movement of the saw towards the table surface upon detection by the sensor of the saw moving parallel to the table surface.

45. (Amended) An apparatus as in claim 44, further comprising:
a support arm coupled to the table,
a **shaft** holder connected to the support arm,
a shaft slidably received within the **shaft** holder and
a hinge coupling the **shaft** holder to the saw, the hinge permitting vertical pivotal movement of the saw towards and away from the table surface.

48. (Amended) An apparatus comprising:
a table having a surface arranged and constructed to support a workpiece,
a saw unit having a saw blade,
a support arm coupled to the table,
a **shaft** holder connected to the support arm,
a shaft slidably received within the **shaft** holder, the shaft permitting the saw unit to move parallel to the table surface and
a hinge coupling the shaft to the saw unit, the hinge permitting the saw unit to move towards and away from the table surface,
a first sensor **[arranged and constructed to detect] detecting** movement of the saw unit parallel to the table surface,
a second sensor **[arranged and constructed to detect] detecting** movement of the saw unit towards the table surface,

a first lock communicating with the first sensor, wherein the first lock is arranged and constructed to automatically prevent movement of the saw unit towards the table surface without operator assistance upon detection by the first sensor of the saw unit moving parallel to the table surface and

a second lock communicating with the second sensor, wherein the second lock is arranged and constructed to automatically prevent movement of the saw unit parallel the table surface without operator assistance upon detection by the second sensor of the saw moving towards the table surface.

49. (Amended) An apparatus as in claim 48, further comprising a screw threadably engaged within the shaft holder and a solenoid in communication with the sensor and coupled to the screw, wherein the solenoid rotates the screw to engage the shaft upon detection by the sensor of the saw moving towards the table surface, whereby movement of the saw parallel to the table surface is prevented.

51. (Amended) A method for cutting a workpiece comprising:

moving a saw unit comprising a saw blade in a plane parallel to a surface of a table, wherein the table is pivotally coupled to the saw **[blade]** unit and the workpiece is disposed on the table surface,

detecting movement of the saw blade in a plane parallel to the table surface by a sensor disposed proximally to the saw blade,

communicating the detection by the sensor of the parallel movement to a lock operably coupled to the saw unit, and

actuating the lock in order to prevent movement of the saw blade towards the table surface.

52. (Amended) A method for cutting a workpiece comprising:

moving a saw unit comprising a saw blade toward a surface of a table, wherein the table is pivotally coupled to the saw **[blade]** unit and the workpiece is disposed on the table surface,

detecting movement of the saw blade toward the table surface by a sensor disposed proximally to the saw blade,

communicating the detection by the sensor of movement toward the table surface to a lock operably coupled to the saw unit, and

actuating the lock in order to prevent movement of the saw blade in a plane parallel to the table surface.

53. (Amended) An apparatus for cutting a workpiece comprising:

means for moving a saw unit comprising a saw blade in a plane parallel to a surface of a table, wherein the table is pivotally coupled to the saw **[blade] unit**,

means for detecting movement of the saw blade in a plane parallel to the table surface, the detecting means being disposed proximally to the saw blade,

means for communicating the detection by the detecting means of the parallel movement to a lock operably coupled to the saw unit, and

means for actuating the lock in order to prevent movement of the saw blade towards the table surface.

54. (Amended) An apparatus for cutting a workpiece comprising:

means for moving a saw unit comprising a saw blade toward a surface of a table, wherein the table is pivotally coupled to the saw **[blade] unit**,

means for detecting movement of the saw blade toward the table surface, the detecting means being disposed proximally to the saw blade,

means for communicating the detection by the detecting means of movement toward the table surface to a lock operably coupled to the saw unit, and

means for actuating the lock in order to prevent movement of the saw blade in a plane parallel to the table surface.